Claims

1. A compound of formula (I) or a pharmaceutically acceptable salt thereof:

$$(R^2)_m$$
 $(CH_2)_p$
 $(R^3)_n$
 $(R^5)_n$
 $(R^5)_n$
 $(R^5)_n$
 $(R^5)_n$
 $(R^5)_n$

wherein:

 R^1 represents -C₁₋₆ alkyl substituted by one or more (e.g. 1, 2 or 3) halogen or cyano groups, -C₀₋₄ alkyl-C₃₋₈cycloalkyl, -C₂₋₄ alkoxy-C₁₋₄ alkyl, -C₁₋₄ alkyl-aryl, -C₁₋₄ alkyl-

heteroaryl or -C₀₋₄ alkyl-heterocyclyl; wherein said cycloalkyl, aryl, heteroaryl or heterocyclyl groups of R¹ may be optionally substituted by one or more (e.g. 1, 2 or 3) halogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, cyano, amino

R² represents hydrogen or C₁₋₆ alkyl;

or trifluoromethyl groups;

m represents an integer from 1 to 4, such that when m is an integer greater than 1, two R² groups may instead be linked to form a CH₂, (CH₂)₂ or (CH₂)₃ group;

R³, R⁴ and R⁵ independently represent hydrogen, halogen, cyano, -CF₃, -CF₃O, C₁₋₈ alkyl, C₁₋₈ alkoxy, C₁₋₈ alkanoyl or a group –CONR⁶R⁷;

R⁶ and R⁷ independently represent hydrogen or C₁₋₆ alkyl or R⁶ and R⁷ together with the nitrogen to which they are attached may form a nitrogen containing heterocyclyl or heteroaryl group;

n represents an integer from 1 to 3;

p represents 1 or 2;

A represents an -aryl, -heteroaryl, -aryl-aryl, -aryl-heteroaryl, -heteroaryl-aryl or -heteroaryl-heteroaryl group;

wherein said aryl and heteroaryl groups of A may be optionally substituted by one or more (e.g. 1, 2 or 3) substituents which may be the same or different, and which are selected from the group consisting of halogen, hydroxy, cyano, nitro, trifluoromethyl, trifluoromethoxy, C_{1-6} alkyl, trifluoromethanesulfonyloxy, pentafluoroethyl, C_{1-6} alkoxy,

arylC₁₋₈ alkoxy, C₁₋₈ alkylthio, C₁₋₆ alkoxyC₁₋₈ alkyl, C₃₋₇ cycloalkylC₁₋₈ alkoxy, C₁₋₈ alkoxy, C₁₋₈ alkylsulfonyl, C₁₋₈ alkylsulfonyl, C₁₋₈ alkylsulfonyloxy, C₁₋₈ alkylsulfonylC₁₋₈ alkyl, arylsulfonyl, arylsulfonyloxy, arylsulfonylC₁₋₈ alkyl, C₁₋₈ alkylsulfonamido, C₁₋₈ alkylamido, C₁₋₈ alkylsulfonamidoC₁₋₈ alkyl, arylsulfonamido, arylcarboxamido, arylsulfonamidoC₁₋₈ alkyl, arylcarboxamidoC₁₋₈

5

20

25

WO 2005/026125 PCT/EP2004/010129

alkyl, aroyl, aroylC₁₋₆ alkyl, arylC₁₋₆ alkanoyl, or a group CONR⁸R⁹ or SO₂NR⁸R⁹, wherein R⁸ and R⁹ independently represent hydrogen or C₁₋₆ alkyl or R⁸ and R⁹ together with the nitrogen atom to which they are attached may form a nitrogen containing heterocyclyl or heteroaryl group;

5 or solvates thereof.

20

25

30

35

- 2. A compound of formula (I) as defined in claim 1 which is:
- 8-(4-(4-Fluorobenzyl)-piperazin-1-yl)-3-phenylsulfonylquinoline;
- 8-(4-Cyclopropylmethyl-piperazin-1-yl)-3-phenylsulfonylquinoline;
- 10 · 8-(4-(Cyclohexyl)-piperazin-1-yl)-3-phenylsulfonylquinoline;
 - 8-(4-Cyclopentyl-piperazin-1-yl)-3-phenylsulfonylquinoline;
 - 8-(4-Cyclobutyl-piperazin-1-yl)-3-phenylsulfonylquinoline;
 - 8-(4-Cyclopropyl-piperazin-1-yl)-3-phenylsulfonylquinoline;
 - 8-(4-(2-methoxyethyl)-piperazin-1-yl)-3-phenylsulfonylquinoline;
- 8-(4-(2,2,2-Trifluoroethyl)-piperazin-1-yl)-3-(4-fluoro)-phenylsulfonylquinoline; or a pharmaceutically acceptable salt thereof.
 - 3. A pharmaceutical composition which comprises a compound as defined in claim 1 or claim 2 and a pharmaceutically acceptable carrier or excipient.
 - 4. A compound as defined in claim 1 or claim 2 for use in therapy.
 - 5. A compound as defined in claim 1 or claim 2 for use in the treatment of depression, anxiety, Alzheimer's disease, age related cognitive decline, ADHD, obesity, mild cognitive impairment, schizophrenia, cognitive deficits in schizophrenia and stroke.
 - 6. The use of a compound of formula (I) as defined in claim 1 or claim 2 or a pharmaceutically acceptable salt thereof in the manufacture of a medicament for the treatment or prophylaxis of depression, anxiety, Alzheimer's disease, age related cognitive decline, ADHD, obesity, mild cognitive impairment, schizophrenia, cognitive deficits in schizophrenia and stroke.
 - 7. A pharmaceutical composition comprising a compound of formula (I) as defined in claim 1 or claim 2 for use in the treatment of depression, anxiety, Alzheimer's disease, age related cognitive decline, ADHD, obesity, mild cognitive impairment, schizophrenia, cognitive deficits in schizophrenia and stroke.
- A method of treating depression, anxiety, Alzheimer's disease, age related cognitive decline, ADHD, obesity, mild cognitive impairment, schizophrenia, cognitive deficits in schizophrenia and stroke which comprises administering a safe and therapeutically effective amount to a patient in need thereof of a compound of formula (I) as defined in claim 1 or claim 2 or a pharmaceutically acceptable salt thereof.